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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/720,189 | 11/25/2003 | Steven T. Fink | 245344US6YA | 4219 |
| 22850 | 7590 | 04/05/2006 | | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | EXAMINER CROWELL, ANNA M | |
| | | | ART UNIT 1763 | PAPER NUMBER |
| DATE MAILED: 04/05/2006 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/720,189

Applicant(s)

FINK, STEVEN T.

Examiner

Michelle Crowell

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1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on November 25, 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claims 4 and 5 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Species, there being no allowable generic or linking claim.

Applicant timely traversed the restriction (election) requirement in the reply filed on January 19, 2006.

2. Applicant's election with traverse of Species I, claims 1-4 and 6-11 is acknowledged.

The traversal is on the ground(s) that no reasons were given in the Restriction Requirement as to why the claims are independent and/or distinct. This is not found persuasive because where two or more species are claimed, a requirement for restriction to a single species is proper if the species are mutually exclusive. Additionally, the search required for the features of the elected species is not co-extensive with the search required for the features of the non-elected species

The requirement is still deemed proper and is therefore made FINAL.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the motion actuator hardware must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing

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should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities: On page 7, paragraph [0027], the vacuum port and the gas inlet ports have the same reference number “14”.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3, 6, and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by

Ohkuni et al. (U.S. 6,210,593).

Referring to Figure 1 and column 6, line 38-column 7, line 10, Ohkuni et al. teaches a

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plasma processing system comprising: a process chamber 100 (col.6, line 40); an upper electrode assembly 100 (Fig. 1); a fluid flow control member 111 (col. 6, lines 58-61); and a chuck assembly 102, 103, 111 including a plurality of lift pin assemblies 113 (col. 7, lines 2-4), for lifting the fluid flow control member at at least one location.

With respect to claim 3, the plasma processing system further includes that the fluid flow control member comprises a focus ring (col. 6, lines 58-61).

With respect to claim 6, the plasma processing system further includes that the lift pins 113 of each of the plurality of lift pin assemblies are lifted simultaneously (Fig. 1, col. 7, lines 1-10).

With respect to claim 9, the plasma processing system further comprises a vacuum port 106 located next to at least one of the plurality of lift pins (Fig. 1).

With respect to claim 10, in a movable focus ring the improvement comprising: a hole 109 for facilitating lifting of the focus ring by lift pins (col. 6, lines 58-61).

With respect to claim 11, in a movable focus ring the improvement comprising: a recess 112 for facilitating lifting of the focus ring by lift pins (col. 6, line 66-col. 7, line 4).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkuni et al. (U.S. 6,210,593) in view of Kaminishizono (JP 2000049100 A).

The teachings of Ohkuni et al. have been discussed above.

Additionally, Ohkuni et al. teaches that the chuck assembly includes an RF electrode 102 (col. 6, line 45).

Ohkuni et al. fails to specifically teach an electrostatic clamping electrode.

Referring to the abstract, Kaminishizono teaches a plasma processing system wherein the wafer 5 is held to the lower electrode 3 by electrostatic clamping electrode. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the lower electrode of Ohkuni et al. with an electrostatic clamping electrode as taught by Kaminishizono in order to ensure that the wafer is securely held onto the lower electrode.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkuni et al. (U.S. 6,210,593) in view of Koike (U.S. 2002/0072240 A1).

The teachings of Ohkuni et al. have been discussed above.

Ohkuni et al. fails to specifically teach the lift pins are controllable to be lifted individually.

Referring to paragraphs [0051]-[0054], Koike teaches a plasma processing apparatus wherein each lift mechanism is controlled individually in order for the processing rate to remain constant [0064]. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention for each lift pin of Ohkuni et al. to be lifted individually as taught by Koike in order for the processing rate to remain constant.

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkuni et al. (U.S. 6,210,593) in view of Koike (U.S. 2002/0072240 A1) and Yamasaki et al. (U.S. 6,797,068).

The teachings of Ohkuni et al. have been discussed above.

Ohkuni et al. fails to specifically teach motion actuator hardware, bellows, and a seal for separating the motion actuator hardware from the plasma.

Referring to paragraphs [0051]-[0054], Koike teaches a plasma processing apparatus wherein motion actuator hardware 5, 7, 8 is used to electronically control the lifting of the focus ring. Additionally, the motion actuator hardware is sealed from the plasma. Furthermore, in Figure 1, column 4, lines 49-51, Yamasaki et al. teach that bellows expand and retract in order to keep an airtight state in the processing chamber. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention for each lift pin assemblies of Ohkuni et al. to have motion actuator hardware, bellows, and a seal as taught by Koike and Yamasaki et al. in order to electronically control the lifting of the focus and ring and maintain the process chamber in an airtight state.

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
Conclusion


12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Miyoshi '673, Ni et al. '547, and Yamaguchi et al.'771 teach movable focus rings.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Crowell whose telephone number is (571) 272-1432. The examiner can normally be reached on M-F (9:30 -6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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